

Unintentional Drug Poisoning (Overdose) Deaths in New York City in 2021

During 2021, an estimated 108,000 drug overdose deaths occurred in the United States with more overdose deaths than any prior year on record.¹ In New York City (NYC), the latest data on overdose mortality demonstrate similar trends citywide, with overdose deaths in 2021 surpassing those in 2020. This Epi Data Brief presents provisional data on unintentional drug poisoning deaths in NYC in 2021, hereafter referred to as overdose deaths or overdose mortality. The NYC Department of Health and Mental Hygiene reports overdose deaths annually, reflecting deaths during the prior calendar year. To support efforts to prevent overdose deaths and ensure equitable distribution of resources, overdose deaths are reported for a range of factors, particularly by neighborhood and race/ethnicity.

Key findings

- In 2021, there were 2,668 overdose deaths in NYC, compared with 2,103 in 2020, an increase of 565 deaths.
- The rate of overdose death increased to 39.4 per 100,000 NYC residents in 2021, compared with 31.6 per 100,000 in 2020.
- Black New Yorkers had the highest rate of overdose death, and the largest absolute increase in rate from 2020 to 2021 (39.8 vs. 53.5 per 100,000 residents).
- Residents of the Bronx had the highest rate of overdose death in 2021 (70.6 per 100,000 residents), and the largest absolute increase in rate from 50.3 per 100,000 in 2020.
- New Yorkers ages 55 to 64 years had the highest rate of overdose, and the largest absolute increase in rate from 2020 to 2021 (53.5 vs. 81.4 per 100,000 residents).
- For the fifth year in a row, fentanyl was the most common substance involved in overdose deaths, present in 80% of overdose deaths in 2021.

Definitions: Unintentional drug poisoning (overdose) deaths

exclude poisonings where the manner of death was classified as intentional (suicide), undetermined, or a homicide. They are also referred to as “overdose deaths” or “overdose mortality.”

Opioids include substances derived from “natural” opium, such as morphine or heroin, and synthetic drugs, such as methadone or fentanyl.

Opioid analgesics are commonly known as prescription pain relievers, such as oxycodone (Percocet®) and hydrocodone (Vicodin®). For this analysis, opioid analgesics exclude fentanyl and tramadol.

Fentanyl includes fentanyl and fentanyl analogs. Fentanyl analogs, such as acetylfentanyl and furanylfentanyl, are similar in chemical structure to fentanyl. Fentanyl can be one of two types: synthetic opioid analgesics pharmaceutically manufactured to manage severe pain or non-pharmaceutically manufactured.

Xylazine is a non-opioid veterinary sedative/ tranquilizer drug.

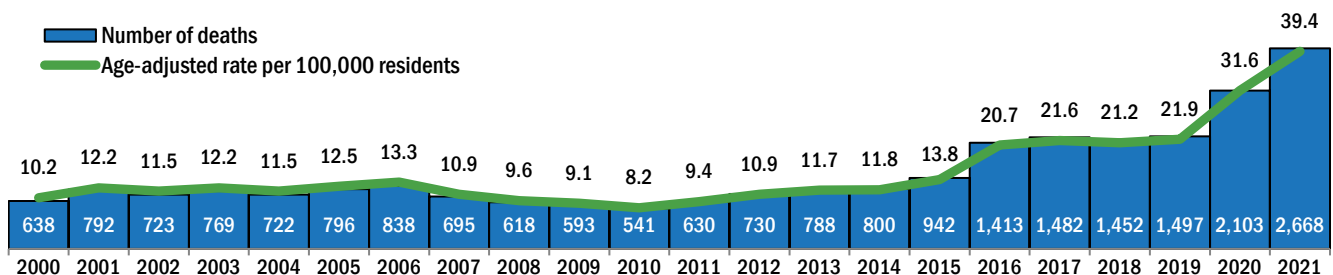
Drugs involved in overdose deaths are not mutually exclusive; percent will not equal 100%. Drug-involvement reported based on the detection of substances in post-mortem toxicology testing.

Reference: 1. National Center for Health Statistics. U.S. Overdose Deaths In 2021 Increased Half as Much as in 2020 – But Are Still Up 15%. Reviewed May 11, 2022. Accessed September 7, 2022.

www.cdc.gov/nchs/pressroom/nchs_press_releases/2022/202205.htm#

In New York City, rates of overdose death are the highest since reporting began in 2000

Number and age-adjusted rate per 100,000 residents of unintentional drug poisoning (overdose) deaths, New York City, 2000 to 2021



Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2000–2021; 2021 data are provisional and subject to change.

Overdose death rates are higher and growing faster for some groups and places

- In 2021, the rate of overdose death among male New Yorkers (62.1 per 100,000 males) was over three times as high as the rate among female New Yorkers (18.9 per 100,000 females).
- Rates of overdoses death increased across all racial/ethnic groups from 2020 to 2021. The highest rate in 2021 and largest increase from 2020 was among Black New Yorkers; the rate among Latino/a New Yorkers increased 13.5 per 100,000 residents (from 35.7 to 49.2 per 100,000); among White New Yorkers, the rate increased 2.1 per 100,000 (from 34.1 to 36.2 per 100,000); and among Asian and Pacific Islander New Yorkers, the rate increased 1.5 per 100,000 (from 3.9 to 5.4 per 100,000).
- In 2021, New Yorkers ages 55 to 64 years had the highest rate of overdose death (81.4 per 100,000 residents) and the largest absolute increase from 2020 (an increase of 27.9 per 100,000) compared with other age groups.

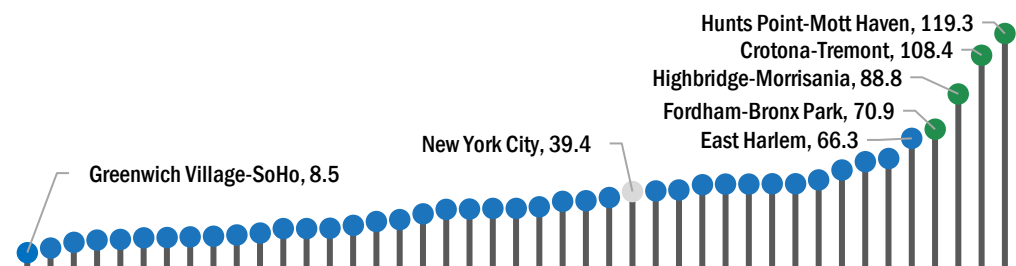
Data Sources:

NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics: Mortality data for 2000–2021 were collected through an in-depth review of data from DOHMH Bureau of Vital Statistics and NYC Office of the Chief Medical Examiner. Data are limited to individuals ages 15 to 84. Data for 2021 are provisional and subject to change.

Rate calculation: DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000–2020, updated October 2021. Rates will differ from previously reported rates based on Census counts or previous versions of population estimates. Rates are age-adjusted to Census 2000 US standard population, except those for specific age groups.

Substantial disparities in rates of overdose death exist by neighborhood of residence in New York City, with the four highest rates occurring in neighborhoods in the Bronx

Rate of unintentional drug poisoning (overdose) death, per 100,000 residents 2021



The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes.

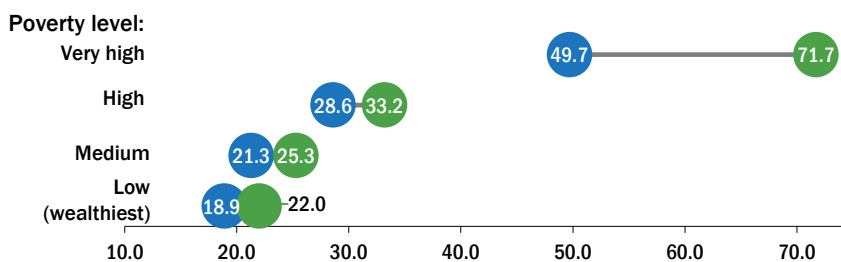
For more information visit: <http://www1.nyc.gov/assets/doh/downloads/pdf/ah/zipcodetable.pdf>.

Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2021; 2021 data are provisional and subject to change.

- From 2020 to 2021, rates of overdose death increased the most among residents of the Bronx (from 50.3 to 70.6 per 100,000) followed by residents of Brooklyn (from 21.4 to 28.8 per 100,000), Manhattan (from 26.3 to 32.8 per 100,000), Staten Island (from 37.7 to 39.3 per 100,000), and Queens (from 20.6 to 21.4 per 100,000).
- The neighborhoods with the highest rates of overdose death were Hunts Point-Mott Haven, Crotona-Tremont, and Highbridge-Morrisania in the Bronx with large absolute increases from 2020 to 2021 (an increase of 42.2 per 100,000 residents, 29.7 per 100,000, and 25.2 per 100,000, respectively).

Residents of very high poverty neighborhoods had the highest and fastest growth in rate of overdose death

Rate of unintentional drug poisoning (overdose) death per 100,000 residents, by neighborhood poverty level, 2020 and 2021



Neighborhood poverty based on ZIP code and defined as the percentage of residents with incomes below 100% of the federal poverty level (FPL), per American Community Survey 2008–2012, in four groups: low (<10% FPL), medium (10% - <20% FPL), high (20% - <30% FPL), and very high (>=30% FPL).

Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2020–2021; 2021 data are provisional and subject to change.

- Rates of overdose death among South Bronx^ residents increased from 2020 to 2021 (from 72.1 to 103.5 per 100,000).

- In 2021, residents of very high poverty neighborhoods had the highest rate of overdose death (71.7 per 100,000 residents) and the largest absolute increase in rate from 49.7 per 100,000 in 2020, compared with residents of high, medium, and low poverty neighborhoods.

^The South Bronx includes the UHF-42 neighborhoods of Crotona-Tremont, Highbridge-Morrisania, and Hunts Point-Mott Haven.

Fentanyl continues to drive overdose deaths in 2021

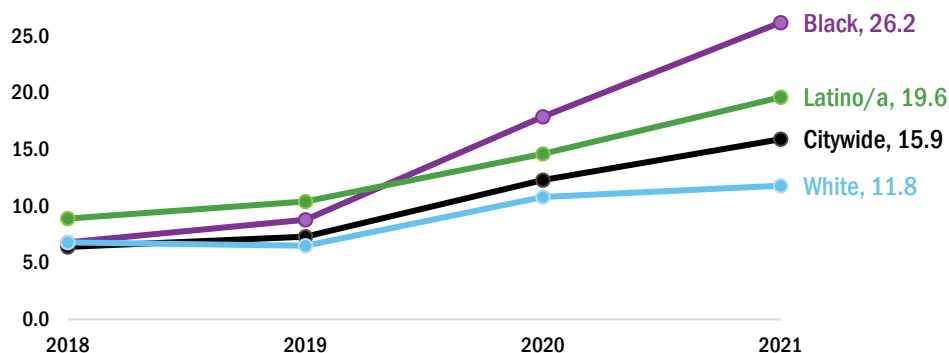
- In 2021, fentanyl was the most common substance involved in overdose deaths (80%), followed by cocaine (47%), alcohol (39%), and heroin (37%).
- Fentanyl was involved in 97% of heroin-involved overdoses, 85% of cocaine-involved overdoses, 84% of opioid analgesic-involved overdoses, 84% of benzodiazepine-involved overdoses, and 71% of amphetamine-involved overdoses.
- The percent of all overdose deaths involving heroin decreased from 47% to 37% from 2020 to 2021, while the percent of overdose deaths involving fentanyl excluding heroin increased from 33% to 44%.
- All xylazine-involved overdose deaths also involved fentanyl (100%).
- 84% of all overdose deaths involved an opioid. The rate of opioid-involved overdose death was highest among Black New Yorkers (43.6 per 100,000 residents), followed by Latino/a (42.2 per 100,000), White (31.8 per 100,000), and Asian/Pacific Islander New Yorkers (4.1 per 100,000).
- Approximately half (49%) of all opioid-involved overdoses also involved cocaine; alcohol was involved in 41% of opioid-involved deaths.

Cocaine overdose deaths most impact Black New Yorkers in 2021

- Cocaine was involved in 47% of overdose deaths in 2021. From 2020 to 2021, the rate of cocaine-involved overdose death increased from 15.1 to 18.7 per 100,000 residents.
- In 2021, Black New Yorkers had the highest rate of cocaine-involved overdose death (31.9 per 100,000 residents), followed by Latino/a (22.5 per 100,000), White (13.6 per 100,000), and Asian/Pacific Islander New Yorkers (2.1 per 100,000).
- 88% of cocaine-involved overdoses also involved opioids. Fentanyl was the most common opioid in cocaine-involved overdose deaths (85%).
- 1,071 overdose deaths involved cocaine and fentanyl, with Black New Yorkers having the highest rate (26.2 per 100,000 residents) and White New Yorkers having the lowest rate (11.8 per 100,000).

Black and Latino/a New Yorkers experienced sharp increases in overdose deaths involving cocaine and fentanyl

Rate of unintentional drug poisoning (overdose) deaths involving cocaine and fentanyl, citywide and by race/ethnicity^a per 100,000 residents, 2018-2021



^aWhite and Black race categories exclude Latino/a ethnicity. Latino/a includes Hispanic or Latino/a of any race. Asian-Pacific Islander category suppressed due to small number of events.

Other substances may be present unless otherwise specified.

Sources: NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics, 2018-2021; 2021 data are provisional and subject to change.

Change in post-mortem toxicology testing

During 2021, in response to the increased number of heroin and fentanyl seizures containing xylazine, the Office of the Chief Medical Examiner introduced a new, more sensitive test for xylazine and began testing all opioid samples for xylazine.

During 2021, when a more sensitive test was implemented, xylazine was detected in 429 overdose deaths (19% of opioid-involved overdose deaths), compared with 52 overdose deaths (3% of opioid-involved overdose deaths) in 2020.

Definitions:

Neighborhood: The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes. For more information visit:

www1.nyc.gov/assets/doh/downloads/pdf/ah/zipcodetable.pdf

Neighborhood poverty: Based on ZIP code and defined as the percentage of residents with incomes below 100% of the federal poverty level (FPL), per American Community Survey 2008–2012, in four groups: low (<10% FPL), medium (10% - <20% FPL), high (20% - <30% FPL), and very high (>=30% FPL).

Race/ethnicity: For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White, and Asian/Pacific Islander race categories do not include people of Latino/a origin.

Implications

In 2021, overdose death rates in NYC reached unprecedented levels, increasing 80% since 2019 and 25% since 2020. This increase was driven by the presence of fentanyl, a highly potent synthetic opioid which, since 2015, has been increasingly found in the NYC drug supply. While the prevalence of overdose deaths involving fentanyl reached 80% in 2021, the prevalence of overdose deaths involving heroin decreased by 10 percentage points from 2020 to 2021. Other shifts in the types of drugs involved in overdose deaths include the increased presence of xylazine, a non-opioid veterinary sedative/tranquilizer drug. Xylazine use results in heavy sedation that could exacerbate the risk of injury and death from overdose.

In response to the changing drug market, the Health Department implemented a drug checking initiative at syringe service programs (programs that provide harm reduction services to people who use drugs) to facilitate safer drug use practices and overdose prevention. From launch in November 2021 to October 21, 2022, drug checking technicians have tested 334 drug samples provided by 160 individuals. The initiative expanded to an overdose prevention center (OPC) site, enabling people who use these services to receive information about the content of their drugs along with tailored harm reduction messaging that can inform their use in real time.

Overdose mortality data illustrate an increase in racial, economic, age, and place-based disparities in overdose deaths, with the largest increases occurring among older New Yorkers, Black New Yorkers, residents of the Bronx, and residents of very high poverty neighborhoods.

The most prominent inequity in overdose mortality rates in New York City continues to be by geography, reflecting a highly segregated city. As in prior years, these geographic patterns reflect inequities in income, wealth, employment, education, criminal legal system involvement, and housing. All of these factors have been linked to an increased risk of overdose death and are the result of structural racism and disinvestment in communities.

The Health Department is committed to reducing longstanding health inequities by ensuring access to and availability of lifesaving services—including naloxone, harm reduction services, and medications for opioid use disorder—in communities which have been disproportionately impacted by the overdose epidemic. OPCs are place-based initiatives that provide supervised, hygienic spaces for people who use drugs to do so safely, as well as connections to harm reduction, health, mental health, substance use disorder, and social services. OPCs improve individual and community health, increase public safety, and address community concerns of syringe litter and public drug use. The nation's first publically recognized OPCs opened in Washington Heights and East Harlem, NYC, in November 2021, and have been used 41,105 times by 1,950 individuals from launch to October 16, 2022. During this time period, trained staff responded 554 times to prevent potential overdose injury or death. Expansion of OPC services to other neighborhoods experiencing the greatest burden of overdose, such as those in the Bronx, is necessary to prevent overdose deaths and reduce geographic disparities. The Health Department is working with syringe service programs to explore the possibility of expanding OPCs to other parts of the City.

Health equity is attainment of the highest level of health and well-being for all people. Not all New Yorkers have the same opportunities to live a healthy life. Achieving health equity requires focused and ongoing efforts to address historical and contemporary injustices such as discrimination based on social position (e.g., class, immigration status) or social identities (e.g., race, gender, sexual orientation). For more information, visit the Centers for Disease Control and Prevention's [Health Equity](#) page.

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New York City Department of Health and Mental Hygiene





Epi Data Tables

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Data Tables

Table 1.	Number and rate of unintentional drug poisoning (overdose) deaths, New York City, 2018-2021
Map 1.	Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) deaths by neighborhood of residence, 2021
Table 2.	Number and rate of unintentional drug poisoning (overdose) deaths involving opioids New York City, 2018-2021
Map 2.	Top five New York City neighborhoods: Rates of unintentional drug poisoning (overdose) deaths involving opioids by neighborhood of residence, 2021
Table 3.	Number and rate of unintentional drug poisoning (overdose) deaths involving heroin, New York City, 2018-2021
Table 4.	Number and rate of unintentional drug poisoning (overdose) deaths involving cocaine, New York City, 2018-2021
Table 5.	Number and rate of unintentional drug poisoning (overdose) deaths involving opioid analgesics, New York City, 2018-2021
Table 6.	Number and rate of unintentional drug poisoning (overdose) deaths involving fentanyl, New York City, 2021

Data Sources

NYC Office of the Chief Medical Examiner and NYC DOHMH Bureau of Vital Statistics: Mortality data were collected through an in-depth review of data and charts from the Health Department's Bureau of Vital Statistics and the Office of the Chief Medical Examiner for 2018-2021. Data for 2021 are provisional and subject to change.

Rate Calculation: NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020, updated October 2021. These rates will differ from previously reported rates based on Census counts or previous versions of population estimates. Rates are age-adjusted to Census 2000, except those for specific age groups.

Table 1. Number and rate of unintentional drug poisoning (overdose) deaths, New York City, 2018-2021*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020 updated October 2021. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	2018			2019			2020			2021*		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Total Unintentional Drug Poisoning Deaths	1452	100%	21.2	1497	100%	21.9	2103	100%	31.6	2668	100%	39.4
Sex												
Male	1108	76%	34.1	1152	77%	35.5	1639	78%	51.4	1995	75%	62.1
Female	344	24%	9.5	345	23%	9.5	464	22%	13.5	673	25%	18.9
Race/ethnicity†												
Asian and Pacific Islander	32	2%	3.2	34	2%	3.3	35	2%	3.9	51	2%	5.4
Black	375	26%	22.5	392	26%	24.0	628	30%	39.8	858	32%	53.5
Latino/a	485	33%	25.6	510	34%	27.1	667	32%	35.7	918	34%	49.2
White	522	36%	24.5	527	35%	24.3	708	34%	34.1	763	29%	36.2
Other/Missing	38	3%	-	34	2%	-	65	3%	-	78	3%	-
Age group (years)												
15-24	65	4%	6.7	52	3%	5.4	107	5%	11.5	78	3%	8.4
25-34	267	18%	17.8	268	18%	18.0	380	18%	26.1	403	15%	27.7
35-44	250	17%	21.9	298	20%	26.2	433	21%	38.4	575	22%	51.0
45-54	407	28%	38.6	348	23%	33.8	512	24%	51.0	590	22%	58.8
55-64	353	24%	35.3	397	27%	39.7	531	25%	53.5	808	30%	81.4
65-84	110	8%	10.2	134	9%	12.1	140	7%	12.4	214	8%	19.0
Age group (years)												
15-34	332	23%	13.4	320	21%	13.1	487	23%	20.4	481	18%	20.1
35-54	657	45%	29.9	646	43%	29.8	945	45%	44.3	1165	44%	54.7
55-84	463	32%	22.3	531	35%	25.2	671	32%	31.7	1022	38%	48.2
Borough of residence												
Bronx	396	27%	35.3	405	27%	36.5	555	26%	50.3	786	29%	70.6
Brooklyn	275	19%	13.6	298	20%	14.3	424	20%	21.4	586	22%	28.8
Manhattan	268	18%	19.4	287	19%	20.3	364	17%	26.3	447	17%	32.8
Queens	215	15%	11.4	227	15%	12.5	365	17%	20.6	387	15%	21.4
Staten Island	114	8%	32.0	106	7%	28.5	134	6%	37.7	146	5%	39.3
Non-New York City	153	11%	-	140	9%	-	208	10%	-	243	9%	-
Missing	31	2%	-	34	2%	-	53	3%	-	73	3%	-
Borough of death												
Bronx	447	31%	40.2	438	29%	39.3	601	29%	55.1	829	31%	74.6
Brooklyn	310	21%	15.3	336	22%	16.2	478	23%	24.0	651	24%	32.0
Manhattan	368	25%	26.4	389	26%	28.1	515	24%	37.8	629	24%	46.5
Queens	216	15%	11.5	240	16%	13.2	376	18%	21.2	418	16%	23.2
Staten Island	111	8%	31.0	94	6%	25.4	133	6%	37.6	141	5%	38.1
Neighborhood poverty[^]												
Low (wealthiest)	182	13%	13.2	197	13%	14.2	245	12%	18.9	298	11%	22.0
Medium	337	23%	13.5	364	24%	14.7	514	24%	21.3	620	23%	25.3
High	348	24%	20.7	337	23%	20.0	475	23%	28.6	555	21%	33.2
Very high	395	27%	32.8	422	28%	34.9	596	28%	49.7	867	32%	71.7
Non-New York City/Missing	190	13%	-	177	12%	-	273	13%	-	328	12%	-
Drug type^{**}												
Alcohol	577	40%	8.4	593	40%	8.7	840	40%	12.7	1029	39%	15.1
Amphetamines	66	5%	1.0	75	5%	1.2	116	6%	1.7	210	8%	3.3
Benzodiazepines	423	29%	6.2	413	28%	6.0	407	19%	6.3	448	17%	6.8
Cocaine	758	52%	11.1	768	51%	11.3	1009	48%	15.1	1261	47%	18.7
Fentanyl	873	60%	12.9	1016	68%	14.9	1625	77%	24.4	2127	80%	31.4
Heroin	738	51%	10.8	789	53%	11.4	996	47%	14.8	991	37%	14.5
Methadone	200	14%	2.9	196	13%	2.7	296	14%	4.3	349	13%	5.0
Opioid Analgesics ^{††}	151	10%	2.2	178	12%	2.5	337	16%	5.1	406	15%	6.0
Missing toxicology [~]	32	2%	-	23	2%	-	105	5%	-	181	7%	-
Top 5 NYC neighborhoods^{^^}	2020 rate						2021* rate					
	Crotona-Tremont			78.7			Hunts Point-Mott Haven			119.3		
	Hunts Point-Mott Haven			77.1			Crotona-Tremont			108.4		
	Highbridge-Morrisania			63.6			Highbridge-Morrisania			88.8		
	East Harlem			52.5			Fordham-Bronx Park			70.9		
	Stapleton-St. George			51.4			East Harlem			66.3		

*Data for 2021 are provisional and subject to change.

†For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White and Asian/Pacific Islander race categories do not include people of Latino/a origin.

[^]Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2008-2012, in four groups: low (<10%), medium (10% - < 20%), high (20% - < 30%), and very high poverty (>=30%).

^{**}Drug type, not mutually exclusive; percent will not equal 100%. ^{††}For this analysis, opioid analgesics exclude fentanyl and tramadol.

[~]We are unable to derive drug trends when toxicology reports are unavailable due to a variety of reasons (e.g., the next of kin did not agree to an autopsy).

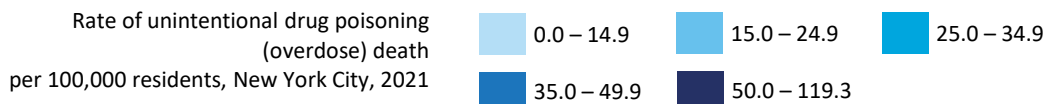
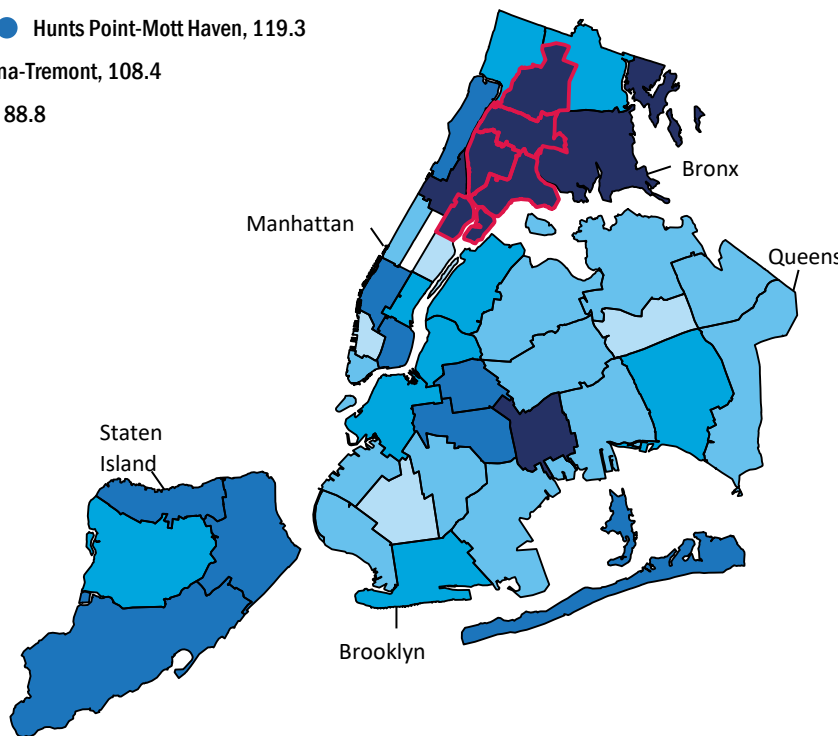
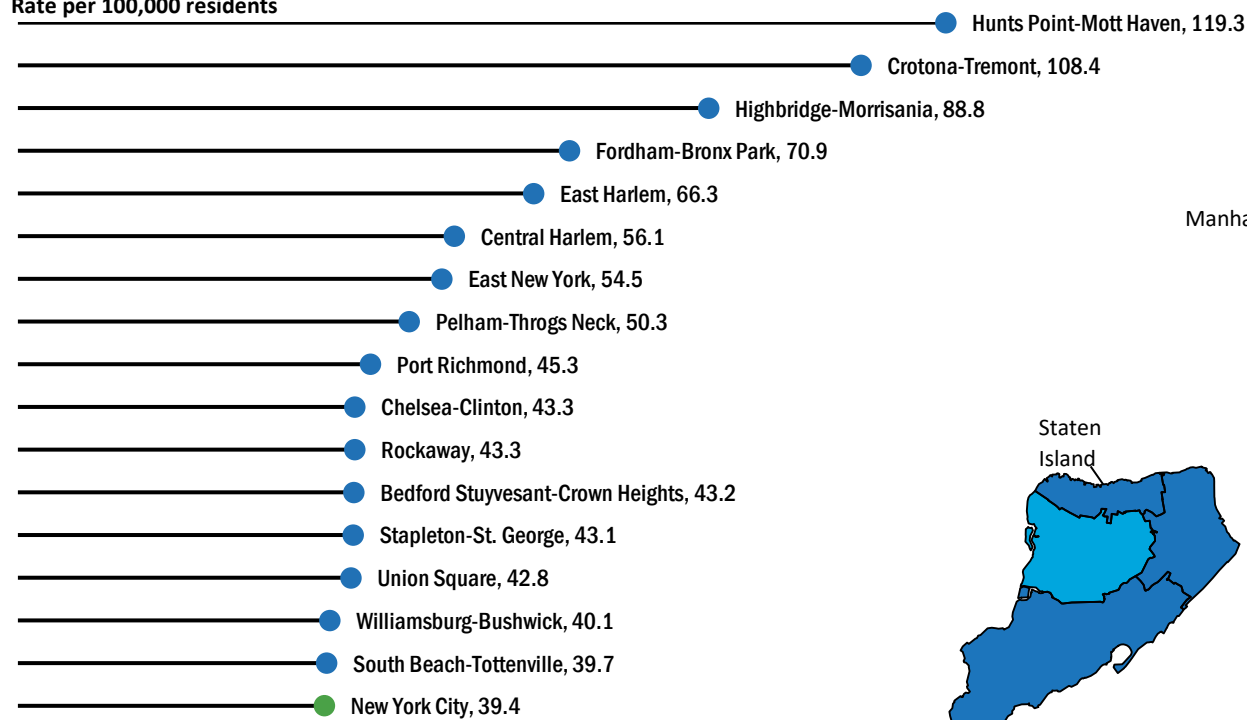
^{^^}Top five of 42 NYC Neighborhoods. Neighborhood refers to residence of decedent.

Map 1. Highest rates of unintentional drug poisoning (overdose) deaths by neighborhood of residence^, New York City, 2021*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020 updated October 2021. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Neighborhoods with rates of overdose death among residents exceeding the New York City rate, 2021

Rate per 100,000 residents



Top 5 neighborhoods with highest rates of overdose death



*Data for 2021 are provisional and subject to change.

^The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes. Neighborhood refers to residence of decedent.

Table 2. Number and rate of unintentional drug poisoning (overdose) deaths involving opioids, New York City, 2018-2021*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020 updated October 2021. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

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Total Unintentional Drug Poisoning Deaths Involving Opioids	1157	80%	17.0	1238	83%	18.1	1795	85%	27.0	2252	84%	33.4
Sex												
Male	894	77%	27.6	947	76%	29.1	1405	78%	44.0	1696	75%	53.0
Female	263	23%	7.3	291	24%	8.1	390	22%	11.4	556	25%	15.6
Race/ethnicity†												
Asian and Pacific Islander	18	2%	1.8	20	2%	2.0	28	2%	3.2	37	2%	4.1
Black	242	21%	14.5	294	24%	18.0	508	28%	32.1	696	31%	43.6
Latino/a	417	36%	22.1	446	36%	23.7	583	32%	31.2	788	35%	42.2
White	452	39%	21.2	452	37%	20.8	622	35%	30.0	668	30%	31.8
Other/Missing	28	2%	-	26	2%	-	54	3%	-	63	3%	-
Age group (years)												
15-24	50	4%	5.1	48	4%	5.0	94	5%	10.1	72	3%	7.7
25-34	235	20%	15.7	239	19%	16.1	337	19%	23.1	346	15%	23.8
35-44	211	18%	18.4	246	20%	21.6	373	21%	33.1	496	22%	44.0
45-54	330	29%	31.3	286	23%	27.8	431	24%	42.9	494	22%	49.2
55-64	250	22%	25.0	317	26%	31.7	445	25%	44.8	671	30%	67.6
65-84	81	7%	7.5	102	8%	9.2	115	6%	10.2	173	8%	15.3
Age group (years)												
15-34	285	25%	11.5	287	23%	11.8	431	24%	18.0	418	19%	17.5
35-54	541	47%	24.6	532	43%	24.6	804	45%	37.7	990	44%	46.5
55-84	331	29%	15.9	419	34%	19.9	560	31%	26.4	844	37%	39.8
Borough of residence												
Bronx	317	27%	28.7	336	27%	30.4	483	27%	43.8	653	29%	58.7
Brooklyn	206	18%	10.3	255	21%	12.3	371	21%	18.8	513	23%	25.3
Manhattan	208	18%	15.0	235	19%	16.6	305	17%	21.9	371	16%	27.4
Queens	169	15%	9.1	174	14%	9.5	302	17%	17.1	327	15%	18.1
Staten Island	103	9%	29.1	93	8%	25.1	115	6%	32.0	137	6%	37.1
Non-New York City	132	11%	-	116	9%	-	176	10%	-	195	9%	-
Missing	22	2%	-	29	2%	-	43	2%	-	56	2%	-
Borough of death												
Bronx	359	31%	32.7	367	30%	33.1	523	29%	48.1	688	31%	62.0
Brooklyn	247	21%	12.3	285	23%	13.7	419	23%	21.1	574	25%	28.3
Manhattan	283	24%	20.1	317	26%	22.9	423	24%	30.9	504	22%	37.6
Queens	166	14%	9.0	185	15%	10.1	314	17%	17.8	353	16%	19.7
Staten Island	102	9%	28.7	84	7%	22.8	116	6%	32.5	133	6%	36.0
Neighborhood poverty^												
Low (wealthiest)	151	13%	11.1	169	14%	12.3	211	12%	16.1	260	12%	19.5
Medium	269	23%	10.8	290	23%	11.7	439	24%	18.4	511	23%	20.9
High	269	23%	16.2	273	22%	16.1	400	22%	24.0	488	22%	29.2
Very High	309	27%	26.0	358	29%	29.6	515	29%	42.9	732	33%	60.5
Non-New York City/Missing	159	14%	-	148	12%	-	230	13%	-	261	12%	-
Top 5 NYC neighborhoods^^				2020 rate			2021* rate					
				Hunts Point-Mott Haven			Hunts Point-Mott Haven			93.8		
				Crotona-Tremont			Crotona-Tremont			89.6		
				Highbridge-Morrisania			Highbridge-Morrisania			76.3		
				Central Harlem			Fordham-Bronx Park			59.6		
				Fordham-Bronx Park			East Harlem			54.8		

*Data for 2021 are provisional and subject to change.

†For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White and Asian/Pacific Islander race categories do not include people of Latino/a origin.

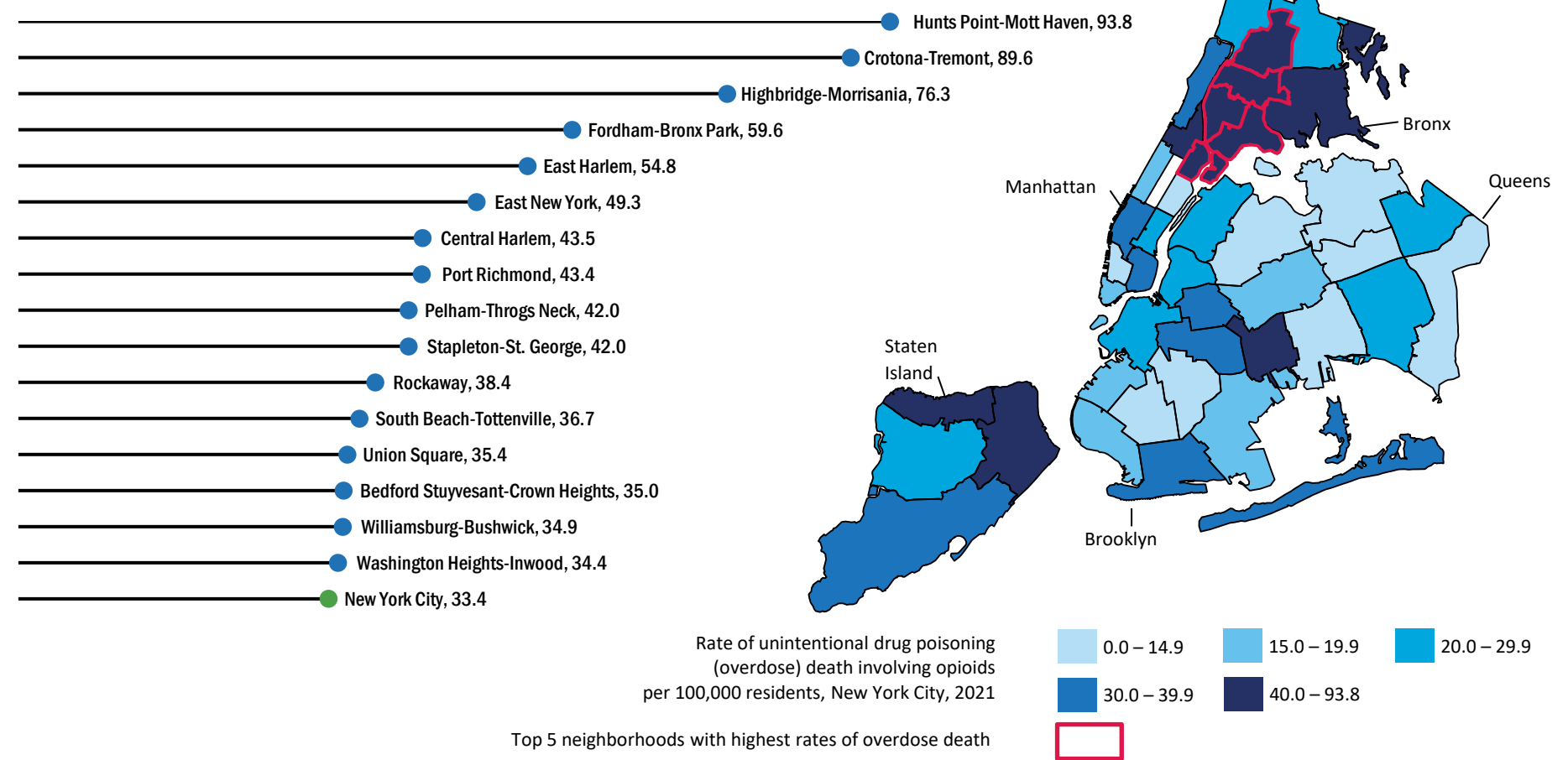
^Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2008-2012, in four groups: low (<10%), medium (10% - < 20%), high (20% - < 30%), and very high poverty (>=30%).

^^Top five of 42 NYC Neighborhoods. Neighborhood refers to residence of decedent.

Map 2. Highest rates of unintentional drug poisoning (overdose) deaths involving opioids by neighborhood of residence[^], New York City, 2021*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020 updated October 2021. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Neighborhoods with rates of opioid-involved overdose death among residents exceeding the New York City rate, 2021
Rate per 100,000 residents



*Data for 2021 are provisional and subject to change.

[^]The United Hospital Fund (UHF) classifies New York City into 42 neighborhoods, comprised of contiguous ZIP codes. Neighborhood refers to residence of decedent.

Table 3. Number and rate of unintentional drug poisoning (overdose) deaths involving heroin, New York City, 2018-2021*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020 updated October 2021. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	2018			2019			2020			2021*		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Total Unintentional Drug Poisoning Deaths	1452	100%	21.2	1497	100%	21.9	2103	100%	31.6	2668	100%	39.4
Total Unintentional Drug Poisoning Deaths Involving Heroin	738	51%	10.8	789	53%	11.4	996	47%	14.8	991	37%	14.5
Sex												
Male	581	79%	17.9	608	77%	18.6	780	78%	24.2	747	75%	23.2
Female	157	21%	4.4	181	23%	5.0	216	22%	6.3	244	25%	6.7
Race/ethnicity†												
Asian and Pacific Islander	11	1%	1.1	9	1%	0.9	10	1%	1.2	18	2%	1.9
Black	151	20%	9.0	176	22%	10.4	262	26%	16.2	268	27%	16.3
Latino/a	261	35%	13.9	289	37%	15.3	324	33%	17.3	357	36%	18.9
White	293	40%	13.6	299	38%	13.7	368	37%	17.6	315	32%	14.9
Other/Missing	22	3%	-	16	2%	-	32	3%	-	33	3%	-
Age group (years)												
15-24	34	5%	3.5	21	3%	2.2	43	4%	4.6	12	1%	1.3
25-34	147	20%	9.8	152	19%	10.2	168	17%	11.5	128	13%	8.8
35-44	125	17%	10.9	151	19%	13.3	198	20%	17.6	215	22%	19.1
45-54	215	29%	20.4	179	23%	17.4	240	24%	23.9	217	22%	21.6
55-64	165	22%	16.5	211	27%	21.1	267	27%	26.9	331	33%	33.4
65-84	52	7%	4.8	75	10%	6.8	80	8%	7.1	88	9%	7.8
Age group (years)												
15-34	181	25%	7.3	173	22%	7.1	211	21%	8.8	140	14%	5.9
35-54	340	46%	15.5	330	42%	15.2	438	44%	20.6	432	44%	20.3
55-84	217	29%	10.5	286	36%	13.6	347	35%	16.4	419	42%	19.8
Borough of residence												
Bronx	201	27%	18.1	199	25%	17.6	253	25%	23.1	269	27%	23.7
Brooklyn	137	19%	6.9	191	24%	9.2	229	23%	11.4	261	26%	12.8
Manhattan	128	17%	9.2	141	18%	9.8	158	16%	11.2	162	16%	11.9
Queens	113	15%	6.1	100	13%	5.4	166	17%	9.2	127	13%	7.0
Staten Island	66	9%	19.2	62	8%	17.2	68	7%	19.1	61	6%	16.1
Non-New York City	78	11%	-	76	10%	-	100	10%	-	82	8%	-
Missing	15	2%	-	20	3%	-	22	2%	-	29	3%	-
Borough of death												
Bronx	230	31%	20.7	223	28%	19.9	266	27%	24.6	294	30%	26.0
Brooklyn	165	22%	8.2	212	27%	10.2	267	27%	13.3	290	29%	14.2
Manhattan	173	23%	12.4	194	25%	13.8	230	23%	16.7	205	21%	15.2
Queens	106	14%	5.7	107	14%	5.7	166	17%	9.2	145	15%	8.2
Staten Island	64	9%	18.3	53	7%	14.8	67	7%	18.8	57	6%	14.7
Neighborhood poverty^												
Low (wealthiest)	93	13%	6.9	105	13%	7.6	108	11%	8.3	102	10%	7.5
Medium	176	24%	7.1	188	24%	7.5	249	25%	10.3	222	22%	9.0
High	175	24%	10.5	178	23%	10.5	226	23%	13.5	213	21%	12.5
Very High	197	27%	16.5	220	28%	18.0	286	29%	23.7	337	34%	27.6
Non-New York City/Missing	97	13%	-	98	12%	-	127	13%	-	117	12%	-
Top 5 NYC neighborhoods^^	2020 rate						2021* rate					
	Crotona-Tremont			41.8			Crotona-Tremont			39.1		
	Hunts Point-Mott Haven			39.4			Hunts Point-Mott Haven			36.8		
	Highbridge-Morrisania			25.6			Highbridge-Morrisania			31.0		
	Central Harlem			24.7			East New York			28.6		
	Stapleton-St. George			22.7			East Harlem			26.6		

*Data for 2021 are provisional and subject to change.

†For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White and Asian/Pacific Islander race categories do not include people of Latino/a origin.

^Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2008-2012, in four groups: low (<10%), medium (10% - < 20%), high (20% - < 30%), and very high poverty (>=30%).

^^Top five of 42 NYC Neighborhoods. Neighborhood refers to residence of decedent.

Table 4. Number and rate of unintentional drug poisoning (overdose) deaths involving cocaine, New York City, 2018-2021*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020 updated October 2021. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	2018			2019			2020			2021*					
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate			
Total Unintentional Drug Poisoning Deaths	1452	100%	21.2	1497	100%	21.9	2103	100%	31.6	2668	100%	39.4			
Total Unintentional Drug Poisoning Deaths Involving Cocaine	758	52%	11.1	768	51%	11.3	1009	48%	15.1	1261	47%	18.7			
Sex															
Male	578	76%	17.8	573	75%	17.7	765	76%	24.0	909	72%	28.4			
Female	180	24%	5.0	195	25%	5.4	244	24%	7.1	352	28%	9.9			
Race/ethnicity†															
Asian and Pacific Islander	9	1%	0.9	16	2%	1.6	13	1%	1.4	19	2%	2.1			
Black	247	33%	14.7	259	34%	15.8	365	36%	23.2	520	41%	31.9			
Latino/a	245	32%	13.0	262	34%	13.9	326	32%	17.5	412	33%	22.5			
White	232	31%	11.2	213	28%	10.0	273	27%	13.1	282	22%	13.6			
Other/Missing	25	3%	-	18	2%	-	32	3%	-	28	2%	-			
Age group (years)															
15-24	32	4%	3.3	20	3%	2.1	30	3%	3.2	20	2%	2.1			
25-34	130	17%	8.7	124	16%	8.4	172	17%	11.8	165	13%	11.3			
35-44	129	17%	11.3	145	19%	12.7	215	21%	19.1	286	23%	25.4			
45-54	222	29%	21.1	211	27%	20.5	266	26%	26.5	298	24%	29.7			
55-64	188	25%	18.8	210	27%	21.0	267	26%	26.9	420	33%	42.3			
65-84	57	8%	5.3	58	8%	5.3	59	6%	5.2	72	6%	6.4			
Age group (years)															
15-34	162	21%	6.6	144	19%	5.9	202	20%	8.5	185	15%	7.7			
35-54	351	46%	16.0	356	46%	16.4	481	48%	22.6	584	46%	27.4			
55-84	245	32%	11.8	268	35%	12.7	326	32%	15.4	492	39%	23.2			
Borough of residence															
Bronx	223	29%	19.8	236	31%	21.4	297	29%	26.8	405	32%	36.5			
Brooklyn	145	19%	7.2	147	19%	7.1	200	20%	10.1	265	21%	13.1			
Manhattan	152	20%	10.9	148	19%	10.4	163	16%	11.8	211	17%	15.6			
Queens	111	15%	5.9	102	13%	5.5	165	16%	9.4	179	14%	9.9			
Staten Island	44	6%	12.5	50	7%	13.9	60	6%	16.9	56	4%	14.6			
Non-New York City	67	9%	-	64	8%	-	93	9%	-	109	9%	-			
Missing	16	2%	-	21	3%	-	31	3%	-	36	3%	-			
Borough of death															
Bronx	248	33%	22.2	255	33%	23.0	321	32%	29.4	435	34%	39.6			
Brooklyn	162	21%	8.0	157	20%	7.6	226	22%	11.3	301	24%	14.8			
Manhattan	202	27%	14.4	192	25%	14.0	230	23%	17.1	288	23%	21.2			
Queens	105	14%	5.6	119	15%	6.4	171	17%	9.7	186	15%	10.3			
Staten Island	41	5%	11.7	45	6%	12.6	61	6%	17.2	51	4%	13.3			
Neighborhood poverty^															
Low (wealthiest)	73	10%	5.5	82	11%	6.0	103	10%	8.0	110	9%	8.2			
Medium	172	23%	6.8	161	21%	6.3	225	22%	9.2	267	21%	10.8			
High	205	27%	12.3	183	24%	11.0	235	23%	14.2	281	22%	16.9			
Very High	221	29%	18.3	255	33%	21.4	319	32%	26.5	449	36%	37.3			
Non-New York City/Missing	87	11%	-	87	11%	-	127	13%	-	154	12%	-			
Top 5 NYC neighborhoods^^	2020 rate						2021* rate								
				Crotona-Tremont			46.1			Crotona-Tremont			63.1		
				Highbridge-Morrisania			37.8			Hunts Point-Mott Haven			57.9		
				Hunts Point-Mott Haven			30.6			Highbridge-Morrisania			43.3		
				Fordham-Bronx Park			28.5			Fordham-Bronx Park			41.0		
				East Harlem			26.4			Central Harlem			32.5		

*Data for 2021 are provisional and subject to change.

†For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White and Asian/Pacific Islander race categories do not include people of Latino/a origin.

^Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2008-2012, in four groups: low (<10%), medium (10% - < 20%), high (20% - < 30%), and very high poverty (>=30%).

^^Top five of 42 NYC Neighborhoods. Neighborhood refers to residence of decedent.

Table 5. Number and rate of unintentional drug poisoning (overdose) deaths involving opioid analgesics††, New York City, 2018-2021*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020 updated October 2021. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	2018			2019			2020			2021*		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Total Unintentional Drug Poisoning Deaths	1452	100%	21.2	1497	100%	21.9	2103	100%	31.6	2668	100%	39.4
Total Unintentional Drug Poisoning Deaths Involving Opioid Analgesics	151	10%	2.2	178	12%	2.5	337	16%	5.1	406	15%	6.0
Sex												
Male	110	73%	3.4	108	61%	3.2	243	72%	7.6	275	68%	8.5
Female	41	27%	1.1	70	39%	1.8	94	28%	2.8	131	32%	3.6
Race/ethnicity†												
Asian and Pacific Islander	3	2%	0.3	1	1%	0.1	4	1%	0.4	3	1%	0.3
Black	24	16%	1.3	32	18%	2.0	70	21%	4.4	98	24%	6.2
Latino/a	46	30%	2.4	51	29%	2.6	91	27%	4.8	135	33%	7.1
White	77	51%	3.5	93	52%	4.2	165	49%	8.0	164	40%	7.7
Other/Missing	1	1%	-	1	1%	-	7	2%	-	6	1%	-
Age group (years)												
15-24	4	3%	0.4	5	3%	0.5	13	4%	1.4	13	3%	1.4
25-34	34	23%	2.3	48	27%	3.2	62	18%	4.3	61	15%	4.2
35-44	31	21%	2.7	31	17%	2.7	73	22%	6.5	88	22%	7.8
45-54	35	23%	3.3	35	20%	3.4	84	25%	8.4	80	20%	8.0
55-64	32	21%	3.2	47	26%	4.7	77	23%	7.8	131	32%	13.2
65-84	15	10%	1.4	12	7%	1.1	28	8%	2.5	33	8%	2.9
Age group (years)												
15-34	38	25%	1.5	53	30%	2.2	75	22%	3.1	74	18%	3.1
35-54	66	44%	3.0	66	37%	3.0	157	47%	7.4	168	41%	7.9
55-84	47	31%	2.3	59	33%	2.8	105	31%	5.0	164	40%	7.7
Borough of residence												
Bronx	28	19%	2.4	43	24%	3.8	78	23%	7.2	108	27%	9.6
Brooklyn	35	23%	1.9	39	22%	1.8	75	22%	3.8	96	24%	4.6
Manhattan	30	20%	2.1	27	15%	1.9	48	14%	3.3	61	15%	4.5
Queens	25	17%	1.4	28	16%	1.5	61	18%	3.5	65	16%	3.5
Staten Island	21	14%	5.8	22	12%	5.9	41	12%	11.2	44	11%	11.8
Non-New York City	12	8%	-	16	9%	-	30	9%	-	27	7%	-
Missing	0	0%	0.0	3	2%	-	4	1%	-	5	1%	-
Borough of death												
Bronx	30	20%	2.7	45	25%	3.9	85	25%	8.0	115	28%	10.2
Brooklyn	40	26%	2.1	43	24%	2.0	81	24%	4.1	105	26%	5.1
Manhattan	34	23%	2.3	35	20%	2.5	66	20%	4.8	78	19%	5.9
Queens	27	18%	1.5	32	18%	1.7	62	18%	3.5	65	16%	3.5
Staten Island	20	13%	5.5	23	13%	6.1	43	13%	11.8	43	11%	11.6
Neighborhood poverty[^]												
Low (wealthiest)	27	18%	1.8	41	23%	3.0	70	21%	5.2	79	19%	5.9
Medium	48	32%	1.9	49	28%	1.9	87	26%	3.8	90	22%	3.7
High	34	23%	2.3	26	15%	1.4	64	19%	3.9	83	20%	5.0
Very High	30	20%	2.3	43	24%	3.3	81	24%	6.7	120	30%	9.6
Non-New York City/Missing	12	8%	-	19	11%	-	35	10%	-	34	8%	-

*Data for 2021 are provisional and subject to change.

†For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White and Asian/Pacific Islander race categories do not include

[^]Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2008-2012, in four groups: low (<10%), medium (10% - < 20%), high (20% - < 30%), and very high poverty (>=30%).

Table 6. Number and rate of unintentional drug poisoning (overdose) deaths involving fentanyl, New York City, 2021*

Source: Bureau of Vital Statistics/Office of the Chief Medical Examiner, New York City; Rates calculated using NYC DOHMH population estimates, modified from US Census Bureau intercensal population estimates 2000-2020 updated October 2021. Analysis by Health Department's Bureau of Alcohol and Drug Use Prevention, Care and Treatment.

Rates per 100,000 New Yorkers are age adjusted, except those for specific age groups.

	Unintentional drug poisoning (overdose) deaths involving fentanyl**			Unintentional drug poisoning (overdose) deaths involving fentanyl, no other opioid**			Unintentional drug poisoning (overdose) deaths involving fentanyl and cocaine**			Unintentional drug poisoning (overdose) deaths involving fentanyl, cocaine, no other opioid**		
	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate	Number	Percent	Rate
Total Unintentional Drug Poisoning Deaths	2668	100%	39.4	2668	100%	39.4	2668	100%	39.4	2668	100%	39.4
Total Unintentional Drug Poisoning Deaths by Drug Type	2127	80%	31.4	959	100%	14.4	1071	100%	15.9	560	100%	8.3
Sex												
Male	1624	76%	50.6	752	78%	23.6	787	73%	24.7	428	76%	13.4
Female	503	24%	14.1	207	22%	6.0	284	27%	8.0	132	24%	3.7
Race/ethnicity†												
Asian and Pacific Islander	36	2%	4.0	16	2%	1.8	17	2%	1.8	8	1%	0.9
Black	665	31%	41.3	350	36%	22.3	425	40%	26.2	248	44%	15.6
Latino/a	754	35%	40.3	337	35%	18.2	359	34%	19.6	193	34%	10.6
White	612	29%	29.2	232	24%	11.3	243	23%	11.8	101	18%	4.9
Other/Missing	60	3%	-	24	3%	-	27	3%	-	10	2%	-
Age group (years)												
15-24	67	3%	7.2	49	5%	5.3	19	2%	2.0	14	3%	1.5
25-34	333	16%	22.9	173	18%	11.9	153	14%	10.5	85	15%	5.8
35-44	470	22%	41.7	215	22%	19.1	252	24%	22.3	123	22%	10.9
45-54	454	21%	45.2	208	22%	20.7	254	24%	25.3	140	25%	14.0
55-64	642	30%	64.7	257	27%	25.9	344	32%	34.7	171	31%	17.2
65-84	161	8%	14.3	57	6%	5.1	49	5%	4.3	27	5%	2.4
Borough of residence												
Bronx	617	29%	55.2	286	30%	26.1	342	32%	30.9	181	32%	16.6
Brooklyn	488	23%	24.0	192	20%	9.4	227	21%	11.2	111	20%	5.4
Manhattan	348	16%	25.6	164	17%	12.2	170	16%	12.6	98	18%	7.2
Queens	306	14%	17.0	153	16%	8.6	158	15%	8.9	90	16%	5.1
Staten Island	124	6%	33.7	44	5%	12.0	51	5%	13.4	18	3%	4.4
Non-New York City	189	9%	-	95	10%	-	93	9%	-	46	8%	-
Missing	55	3%	-	25	3%	-	30	3%	-	16	3%	-
Borough of death												
Bronx	653	31%	58.5	299	31%	27.4	362	34%	33.0	184	33%	17.1
Brooklyn	552	26%	27.1	218	23%	10.7	265	25%	13.1	130	23%	6.3
Manhattan	473	22%	35.1	234	24%	17.5	234	22%	17.2	134	24%	9.8
Queens	329	15%	18.5	163	17%	9.2	163	15%	9.1	93	17%	5.1
Staten Island	120	6%	32.6	45	5%	12.6	47	4%	12.4	19	3%	5.1
Neighborhood poverty^												
Low (wealthiest)	233	11%	17.6	98	10%	7.5	93	9%	7.1	45	8%	3.4
Medium	474	22%	19.4	209	22%	8.6	219	20%	9.0	115	21%	4.7
High	465	22%	27.7	220	23%	13.3	248	23%	15.0	144	26%	8.8
Very High	701	33%	57.7	309	32%	25.8	380	35%	31.5	191	34%	15.9
Non-New York City/Missing	254	12%	-	123	13%	-	131	12%	-	65	12%	-

*Data for 2021 are provisional and subject to change.

†For the purpose of this publication, Latino/a includes people of Hispanic origin based on ancestry reported on the death certificate, regardless of reported race; Latino/a excludes reported ancestry from non-Spanish speaking Central/South American countries, and non-Spanish speaking Caribbean islands. Black, White and Asian/Pacific Islander race categories do not include people of Latino/a origin.

^Neighborhood poverty (based on ZIP code) was defined as percent of residents with incomes below 100% of the federal poverty level (FPL) per American Community Survey 2008-2012, in four groups: low (<10%), medium (10% - < 20%), high (20% - < 30%), and very high poverty (>=30%).

**Other substances may be present unless otherwise specified